

KOMATSU LIMITED

EXECUTIVE ORDER U-R-005-0467 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in California Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-14-012;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)		
2019	KKLXL08.9AAM	8.9	Diesel	8000		
SPECIAL	FEATURES & EMISSION	CONTROL SYSTEMS	TYPICAL EQUIPMENT	APPLICATION		
Recirculation Module, S	ocharger, Charge Air Coo on, Electronic Direct Inject delective Catalyst Recircul on Catalyst, Periodic Trap Oxidation Cataly	tion, Electronic Control ation-Urea, Ammonia Oxidation Catalyst,	Loader, Dozer			

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, Califomia Code of Regulations, (13 CCR) Section 2423):

RATED	EMISSION		EXHAUST (g/kw-hr)				OPACITY (%)			
POWER	STANDARD CATEGORY		NMHC	NOx	NMHC+NOx	со	PM	ACCEL	LUG	PEAK
130 ≤ kW ≤ 560	Tier 4 Final	STD	0.19	0.40	N/A	3.5	0.02	N/A	N/A	N/A
		CERT	0.000	0.11	b-m	0.5	0.000			

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this

_ day of September 2018.

Annette Hebert, Chief

Emissions Compliance, Automotive Regulations and Science Division

ATTACHMENT 1 OF 1

Engine Model Summary Template

U-R-005-0467 11/22/19

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm³/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm³/stroke@peak torque		9.Emission Control eDevice Per SAE J1930
KKLXL08.9AAM	CPL4353:FR94516	SAA6D114E-6	271@1950	145	95	864@1450	170	83	EM,TC,CAC,EGR,DFI,ECM, SCR-U, AMOX, PTOX, OC
KKLXL08.9AAM	CPL4354:FR94517	SAA6D114E-6	220@1950	120	79	774@1450	153	74	EM,TC,CAC,EGR,DFI,ECM, SCR-U, AMOX, PTOX, OC
KKLXL08.9AAM	CPL4353:FR95305	SAA6D114E-6	271@1950	146	95	864@1450	167	81	EM,TC,CAC,EGR,DFI,ECM, SCR-U, AMOX, PTOX, OC
KKLXL08.9AAM	CPL5419:FR96949	SAA6D114E-6	271@1950	145	95	864@1450	170	83	EM,TC,CAC,EGR,DFI,ECM, SCR-U, AMOX, PTOX, OC
KKLXL08.9AAM	CPL5453:FR96950	SAA6D114E-6	220@1950	120	79	774@1450	153	74	EM,TC,CAC,EGR,DFI,ECM, SCR-U, AMOX, PTOX, OC
KKLXL08.9AAM	CPL5419:FR96951	SAA6D114E-6	271@1950	146	95	864@1450	167	81	EM,TC,CAC,EGR,DFI,ECM, SCR-U, AMOX, PTOX, OC
*KKLXL08.9AAM	CPL5453:FR97172	SAA6D114E-6	240@2100	126	89	783@1450	156	76	EM,TC,CAC,EGR,DFI,ECM, SCR-U, AMOX, PTOX, OC

^{*}New Model Added